1957

THE SOCIETY OF THE NEW YORK HOSPITAL

RECORD

NUCLEAR MEDICINE COMES TO THE NEW YORK HOSPITAL

UNITED HOSPITAL FUND - 1957

October and November have been designated as the 1957 United Hospital Fund campaign months. Our Women's and Men's Teams have been so successful in the past that we shall be counting heavily on them for their help again in the coming campaign.

Every gift made through one of our teams brings a direct benefit to The New York Hospital according to the Distribution Formula used by the United Hospital Fund for its Member Hospitals.

If you plan to contribute to the United Hospital Fund this year, won't you give through The New York Hospital?

Attending the Charter Day exercises — L. to R. Dr. Frank Glenn, Dr. Henry N. Pratt, Mr. Francis Kernan and Dr. Joseph C. Hinsey.

CHARTER DAY

Dr. Frank Glenn, Surgeon-in-Chief of The New York Hospital and Professor of Surgery at Cornell University Medical College, and Dr. Joseph C. Hinsey, Director of The New York Hospital-Cornell Medical Center, were the speakers on Tuesday, May 14, 1957, at the exercises commemorating the 186th anniversary of the granting by King George III of the Royal Charter to establish The New York Hospital in 1771. Mr. Francis Kernan, President of The Society of the New York Hospital, presided over the ceremony, held in the Nurses' Residence.

Noting that this Charter Day marked a quarter century in the present buildings, Dr. Hinsey discussed some of the history of the Center, recent developments, and hopes for the future. He spoke of the "first-rate position" of graduates of the School of Nursing in the recent State Board examinations. "There is a great social need for endowment of nursing education . . . We badly need additional class and conference rooms which can be provided by remodelling within the nurses residence."

He outlined other developments still in the planning stage: "During the past quarter century, we have outgrown our facilities. With developments in medical science and service, adequate patient care has required greater space for ancillary facilities, more complex equipment, and more personnel. In 1946 plans were prepared for a building between K and L buildings. A restudy of needs in 1956 brought a suggested solution much the same as that of 1946. On the York Avenue side, Dr. Luckey and our staff are studying the possibility of adding floor space to the B, C and D buildings with connections to the A and E ones, increasing space in the College buildings by about 29 percent."

"We must provide space, facilities and financial support to enable us to push forward the work which has been carried on in such an admirable fashion," he said in conclusion. "We cannot stand still. We must push ahead. In so doing, we shall be motivated by a spirit of service and devotion to the highest quality of performance, by a venturesomeness and a spirit of research and by friendliness, both intramurally and extramurally."

"The New York Hospital and Heart Disease," Dr. Glenn's speech, is printed elsewhere in The Record.

After the ceremony refreshments were served to members and friends of The Society of the New York Hospital.

The New York Hospital and Heart Disease

Frank Glenn, M.D.

Charter Day is our birthday. Birthdays are naturally family affairs. For most of us our first recollection of important events were our birthdays. Perhaps it was the approbation of the family, or maybe it was the chocolate cake that fixed them in your mind; in either event fixed they were. This is our birthday, our 186th, and we, as a family, are gathered here to commemorate it. In so doing we recognize and honor our predecessors for the ideals, efforts and resources they contributed to our present day institution. It is also appropriate that we pause and reflect upon the past accomplishments and present activities of this the second hospital to be founded among the Colonies. During these illustrious 186 years numerous and diversified contributions to medical care have come from this group. At the present time there are more people pursuing a greater number of problems in medical care at The New York Hospital than ever before.

It is an appropriate time to discuss heart. There are two reasons for this. The first is historical. It is just 300 years ago that Dr. William Harvey, discoverer of the circulation, died. Secondly, heart disease is being attacked from numerous approaches with unprecedented success. Since this institution began, it has had patients with cardiovascular disease and has been participating in developments to improve their care. Although progress has been slow and rarely spectacular at the time new approaches were initiated, many of them have had a far-reaching and beneficial effect. In particular this has been true for those basic concepts upon which details of management and therapy depend.

Historically specific dates serve as markers upon which to support a narrative of relative events. Dr. William Harvey died in 1657. One hundred and fourteen (114) years later, in 1771, The

New York Hospital was granted its charter. In 1792 it was located at Broadway and Pearl Street. Only a few blocks away in that same year brokers and merchants had been in the habit of gathering under a sycamore tree, just about where 68-70 Wall Street now is. On May 17th this group of twenty-four business men met and organized the institution that has developed into The New York Stock Exchange. These men were to play an important role in building the nation out of resources then unknown. It was the prosperity derived from these developments that made possible the establishment and maintenance of such voluntary organizations as The Society of the New York Hospital. Elsewhere in the United States as well as in other countries medical progress has been closely allied and followed in the wake of economic development.

The former date, 1657, that of Harvey's death is associated with the acceptance of his concepts which were controversial before. These sound observations on the circulation of the blood are basic to the understanding of heart disease. By 1772 when this hospital came into being, cardiovascular disease was recognized and treated specifically by measures we now consider quite crude, but because of Harvey's research they were at least conceived on a reasonable basis. The early records of The New York Hospital reveal that cardiac failure was then treated as dropsy with calomel and purgatives. The plethoric and presumably the hypertensive were treated by blood letting. Hemorrhage was controlled by ligature and tourniquets. In 1785 Dr. William Witherine (1741-1799) described the effectual use of digitalis from Shropshire, England. Shortly thereafter (about 1800) it was prescribed for patients in The New York Hospital and has remained as one of our most specific medications.

Valentine Mott (1785-1865) a surgeon of this hospital was the first to deliberately ligate the inominate artery for aneurysm within two inches of the heart. This he did in 1818 and in the same year reported with his co-workers, Drs. Watts and Stevens, a 22 year old patient who died because of an intracardiac tumor.

In 1890 Dr. Lewis Atterbury Conner joined The New York Hospital medical staff and was Physician-in-Chief from 1916-1932. He was a man of unusual intellect and foresight, and truly one of America's greatest physicians. Heart disease was of special interest to him. More than any other individual he was responsible for the founding and establishing of the New York Heart Association and later the American Heart Association, serving as its first President (1923-1927). The influence of this organization in the study of cardiovascular disease continues to grow. Last year it raised by voluntary subscription almost 18 million dollars, over half of which is expended for research. It should be added that Col. Oliver H. Payne with Dr. Conner are credited with bringing together by affiliation Cornell Medical College and The New York Hospital, and for providing a basis for the units that made up this Center in 1932. Dr. Conner's death in 1950 terminated 60 years service to the hospital.

Now let us turn to the developments within our Center since the end of World War II. Whereas formerly patients with cardiovascular disease were of concern chiefly to the departments of medicine and pediatrics, there then began to participate in their diagnosis, evaluation, and therapy all the departments, services and facilities of the hospital. This has led to the formation of a group comprised of those representatives from the different services who are in particular interested in these problems for the purpose of developing and teaching new methods for improving the care of patients with cardiovascular disease. A group from surgery together with Dr. Stewart and his associates from Medicine, Dr. Engle and Dr. Goldberg from Pediatrics, Dr. Lukas and Dr. Killip from the Cardiophysiology Laboratory, Dr. Steinberg and Dr. Finby from Radiology and Dr. Mendelson from the Woman's Hospital make up the team who evaluate the cardiovascular problems that might be benefitted by operation.

Heart disease may be divided into three groups: 1) congenital anomalies, 2) acquired cardiac lesions due to infection and 3) heart conditions commonly associated with the aging process.

1. *Congenital malformations are numerous:* Many are incompatible with life and death occurs soon after birth. Many more survive. They sometimes prevent normal growth and development and cause considerable disability. Others may exist without any manifestations until adult life when some additional burden such as pregnancy may cause the heart to falter or fail. Fifty years ago these were held to be of academic interest because corrective measures were not available. Such therapy as there was consisted of limitation of activity to within the patient's capacity. Today pediatricians are becoming expert at recognizing these and look for them because many of these anomalies may be corrected surgically. The contributions of Gross, Blalock, Craaford, Potts, Lillihie and Swan as well as those of other surgeons have enabled us to successfully operate upon over 100 patients with congenital anomalies.

2. *Acquired cardiac lesions due to infection:* Rheumatic heart disease that affects the heart valves is prevalent. For those valves that become narrowed or stenosed surgical enlargement has become an accepted therapeutic measure. Over 300 patients that fall into this category have been operated upon over the past six years. Meticulous evaluation and care of the cardiac group has made this a gratifying endeavor. Improvement in the surgical correction of valvular heart disease as well as congenital lesions is imminent with the use of the mechanical heart which enables us to visualize directly the structures involved. Better results will be had when this is perfected so that the operative risk or mortality is comparable to that of other acceptable major surgical procedures.

3. *Heart conditions commonly associated with the aging process:* Changes in the cardiovascular system are commonly observed to increase as the life span is extended. Atherosclerosis is often pronounced after 50, sometimes causing much disability, but may occur from childhood on. Whenever it is more extensive than is ordinarily found for the particular age group it is usually associated with deposition of atheromatous material. Atherosclerosis is the basis of a considerable proportion of the cardiovascular disease encountered in this country at present. This process or disease tends to involve the entire vascular system. Because life is dependent upon the coronary circulation we are repeatedly reminded of the frequency with which these vessels are involved by atherosclerosis to the extent that they cause death. At present we do not sufficiently understand this process to be able to retard or prevent its progress, much less prevent its occurrence. The changes that take place in the walls of the vessels result more frequently than not in either occlusion in the smaller vessels and in structural defects in the larger ones that are followed by aneurysmal dilation. Both account for much disability and curtailment of life.

Research directed towards discovery of ways and means to prevent or interrupt this processs is of greater significance than the correction of the individual or localized lesions they cause, important and spectacular as those might be. For example, we are at present able to accurately diagnose an aneurysm, resect and replace it with a graft so that the patient is completely relieved of his complaints; and at the same time we are struggling to develop a method to provide a new blood supply to the myocardium that is needed because of gradually increasing occlusion caused by atherosclerosis of the coronary arteries. How much more rewarding would be our efforts if we could by regulation of diet, way of life, or a demonstration of some chemical substance to be added in the drinking water prevent these changes!

The discoveries and developments that are brought about by research and investigation are costly in thought, effort, time and money. The reward or compensation accorded individuals and institutions who successfully accomplish this endeavor is not monetary. Rather their's is the credit and satisfaction that comes with the improving the lot of mankind. The New York Hospital because of its origin, age, past and present accomplishments as well as future potential has an obligation to set a good example for other medical institutions. What goes on here is closely observed. Patient care, teaching and research to be equally pursued requires dedicated personnel of strong moral fibre working with up-to-date facilities in an academic atmosphere.

In conclusion, I would like to express to you my appreciation of your attendance here this afternoon. I hold in high regard each of you and whatever part is yours in sustaining the activities of The Society of the New York Hospital. Considered in the light of its objectives and attainments it has few peers. I am very proud to have been a part of it for 25 years.

It must be evident from what has been said here that when we put forth extra effort to achieve a stated purpose in one limited area such as heart disease, that our overall obligations mount because of a demonstrated capacity for accomplishment. May it so continue as we grow older. And may we with full hearts on such occasions be ever mindful that institutions such as this are in a sense a huge family, with diverse problems but a common goal.

Finally we may with considerable justification say on this our 186th birthday that our past has been illustrious, the present worthy of the able men and women serving in various capacities throughout the Center and that the future, God willing, may be whatever we and our successors have in our hearts to make it.

The New York Hospital —
Cornell Medical Center.

A little girl who was a clinic patient of ours needed glasses.

Our Social Service Department gave her a pair. — *She broke them.*

We gave her a second pair, and, — in playing, *she broke these also.*

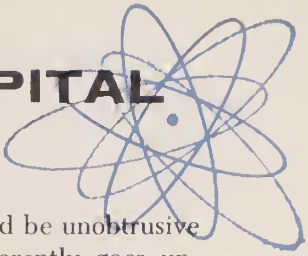
When she came with her mother to ask for a third pair, we told her that she must learn to take better care of her glasses, and, to impress this fact, we asked her to return each week for 5 weeks and pay 10 cents each time toward the cost of the spectacles.

She returned right on schedule, with her mother, and paid her 10 cents for 3 consecutive weeks. On the fourth week, when paying her dime, she said "Take good care of this dime; money is hard to come by."

"MONEY IS HARD TO COME BY!"

How very true, especially when a Hospital has a 15 million dollar annual budget, and must spend, as we did in 1956, nearly 2½ million dollars to aid those in our community who ask our help when ill and who cannot pay full cost for their treatment. But we do take good care of the gifts which come to us — by providing an opportunity for better health to our patients.

NUCLEAR MEDICINE COMES TO THE NEW YORK HOSPITAL



The black box in the corner of the laboratory would be unobtrusive save for its constant clicking. The muffled static apparently goes unnoticed, but the slightest deviation in the noise causes instant attention from every occupant of the room. The sound effects, although reminiscent of the cacophony emanating from a receiving set of the nineteen twenties, indicate a new field of research destined to have far-reaching effects on mankind. For the inconspicuous box is a Geiger counter, a symbol that atomic energy is alleviating human illness at The New York Hospital-Cornell Medical Center.

The Radioisotope Unit was established in November 1955, under the direction of Dr. David V. Becker. A joint activity of the Departments of Medicine and Radiology, its purpose is to diagnose and treat the sick, carry out research, and train medical personnel. That it fills a great need is indicated by the fact that some 2,000 diagnostic tests using radioactive isotopes have been completed, and 150 patients have received radioisotope treatments since the unit was established.

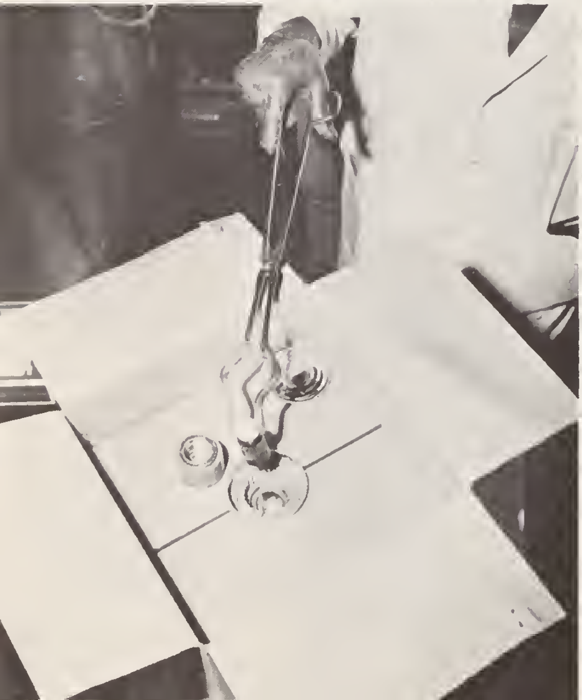
Located in four adjoining rooms on the second floor of the Hospital, the unit maintains various specially-designed instruments to determine radioactivity in the body and in blood and urine specimens. Other laboratories are available for special tests, research and teaching.

Radioactive iodine (I^{131}), employed in the diagnosis and treatment of thyroid disturbances, was the first isotope selected for use in this unit. The most recent isotope to be made available is radioactive gold, for use in stopping accumulation of fluid in some cancer cases. Others that have been employed include radioactive phosphorous for treatment of polycythemia vera (overproduction of red blood cells) and for diagnosis of tumors of the eye globe, and Vitamin B^{12} labeled with radioactive cobalt (Co^{60}) for diagnosis of pernicious anemia. Investigation of the measurement of uterine circulation and kidney function, studies of the effects of radiation, and research in the physiology of thyroid diseases are under way in the Radioisotope Unit. Radioactive isotopes are currently being used for research studies into cancer, as well as for its treatment.

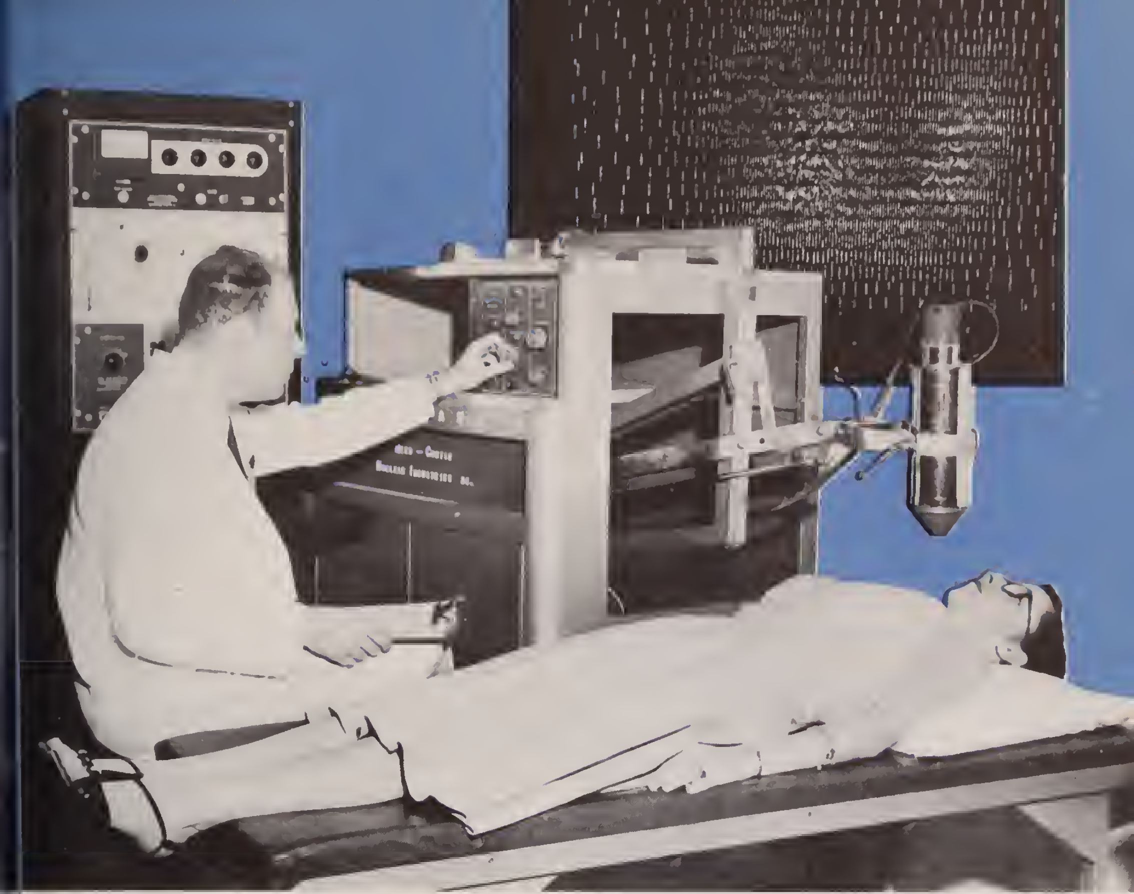
The thought of receiving radioactive treatment was a new concept for Mrs. R, a 45-year old woman who had gone to her doctor because her neck felt tight and had increased in size. Although her weight had dropped considerably, she was scarcely able to fasten a pearl necklace that she customarily wore. She felt jittery and irritable and slept fitfully. Her eyes had begun to bulge slightly and it frightened her the day her hands shook so badly that she had difficulty holding a cup of coffee. After a thorough examination her physician diagnosed her condition clinically as hyperthyroidism, often called "toxic goiter." But the results of her basal metabolism test had been somewhat equivocal so her doctor suggested the radioiodine diagnostic studies.

She was pleasantly surprised to notice that the amount of radioactive iodine that she was given to drink was so small that it did not even flavor the water, and it amused her when another patient called it an "atomic cocktail." The technician explained that the radioactivity of the iodine tracer enabled them to follow this isotope through the body. Later in the test an instrument like a Geiger counter was placed about two feet above her neck to determine the amount accumulated by the thyroid gland. The instrument never touched her body and she felt no discomfort whatever.

The studies confirmed her doctor's clinical impression, for they revealed that her thyroid gland had absorbed an amount of radioactive iodine greater than normal. It was decided that Mrs. R's thyroid condition was suitable for treatment with radioactive iodine. At the Radioisotope Unit the therapy dose was carefully calculated on the basis of the previous tracer study and the doctor's examination. This quantity was considerably larger than the test dose but still tasteless and painless. A staff member explained to her that the thyroid gland traps the isotope,

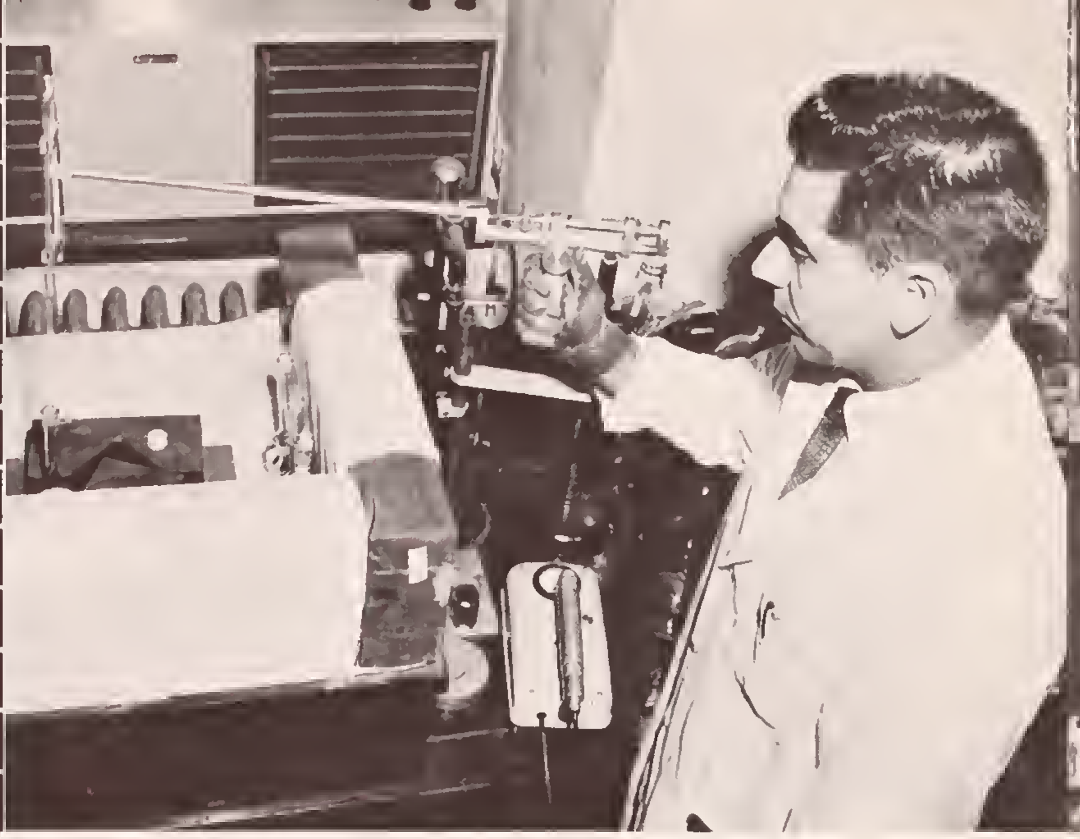


Liquid radioactive isotopes are sterile when received at the Hospital. They are contained in spill-proof bottles, protected by a lead shield and enclosed in a sealed metal can, as shown above. Since radioactive isotopes are short-lived, speed of production, packaging and delivery is essential.



Using the same principle as a Geiger counter, the instrument pictured above moves over the patient's neck, without touching her body, to determine the absorption of the radioactive iodine into the thyroid gland. The graphic reproduction of the thyroid made by the instrument is called a "scan" and looks like the one pictured to the right.

A nuclear counter is in the process of determining the radioactivity in blood samples placed in the lead container to the left of the counter. The technician makes calculations of data from the various laboratory tests to prepare medical reports on the patient.



Lengthened instruments, lead shielding and a Geiger counter, pictured above, are safety precautions observed by doctors and technicians in the preparation and handling of radioactive isotopes.

This elongated pipette with a suction bulb allows the technician to pipette radioactive materials without using his mouth as he tests them.

so to speak, because it requires iodine for the manufacture of thyroid hormone. Then radiation goes to work internally, without the possibility of disturbing the tissue surrounding the gland. Radiation decreases the function of tissue, so the correct dose of radioactive iodine shrinks the thyroid gland and reduces the manufacture of the excess hormone back to normal rate.

Six weeks after the therapy dose her general state of health was greately improved and she was able to fasten the strand of pearls around her throat without discomfort. When she returned ten weeks after the therapy dose, a follow-up tracer study and physical examination indicated that her condition was under control.

The use of radioactive materials in hospitals is not new. Radium and radon, which are also isotopes, have been extensively employed in patient care for more than 40 years and are commonly accepted as a part of radiological practice. The new radioisotopes like iodine, phosphorus and gold, now used in our isotope unit, are

The tracer dose of radioactive iodine given to the patient to drink is tasteless and painless. Although the quantity of radioactivity is infinitesimal it allows the doctor to trace the isotope through the body.

artificially produced in the nuclear reactor, commonly known as the "atomic pile," while radium is a naturally occurring isotope.

Only a minute amount of radioactive material is involved in tracers for diagnosis and research. Larger, but still small doses are used in therapy for hyperthyroidism. To date almost 100,000 patients have been successfully treated with radioactive iodine.

Handling isotopes and caring for patients receiving radioactive treatment involve no more danger than many other occupations, if proper precautions are taken. "After all, crossing a street can be dangerous if one doesn't heed the traffic signals," Dr. Becker explained. "Much of the apprehension about radiation is because of unfamiliarity. X-ray was once feared but now, after years of experience, it is a standard method of treatment. The precautions necessary when dealing with contagious diseases have also become routine to doctors and nurses."

A major precaution for doctors and technicians working directly with isotopes is to keep them at a distance, as radiation decreases with the square of the distance. Lead shielding is another safety measure. These are particularly important when handling very large quantities of isotopes. Consequently various instruments for handling containers are elongated. All workers in the Unit wear badges containing a piece of film that automatically records the radiation, if any, by becoming darkened like a photographic negative. The ubiquitous Geiger counter chatters unceasingly to warn of accidental exposure of the radioactive isotopes.

Isotopes may be procured only by groups which have been approved by the Isotope Division of the Atomic Energy Commission and which have established that they have training and experience to use them safely in conformity with well-established procdures providing full safety to all concerned with their use. Almost all radioisotopes are made available through the Atomic Energy Commission. By-products of the atomic and hydrogen bombs, they are produced in the "atomic pile" (nuclear reactor) at Oak Ridge, Tennessee, and similar installations, emerging

Dr. David V. Becker, Director of the Radioisotope Unit of The New York Hospital-Cornell Medical Center, and his associates discuss the results of some laboratory tests. In the picture (left), seated left to right, are Technicians Nathaniel Griffin and Jacques Halber, Dr. Becker, and Chief Technician Eladio Nunez, and, standing, Volunteer Technician Stephen Baum.

as crude chemicals. However the Radioisotope Unit of The New York Hospital usually buys them through a commercial distributor, where they are prepared, sterilized and packaged. The advantage of obtaining them in this way is that they may be ordered in smaller quantities and on shorter notice than from the Commission, also saving the Hospital the costly operations of processing. As radioisotopes are short-lived, it is impractical to store them in large quantities.

Many people still conjure up terrible spectres of destruction at the thought of atomic energy. But the work of the Radioisotope Unit of The New York Hospital offers positive proof that this vast power has a constructive function in the treatment of disease.

JOINT GRADUATION

GRADUATION EXERCISES for Cornell University Medical College and Cornell University-New York Hospital School of Nursing were held together jointly for the first time this year. The ceremony took place on June 12, at 3 P.M. on the lawn of the Medical Center.

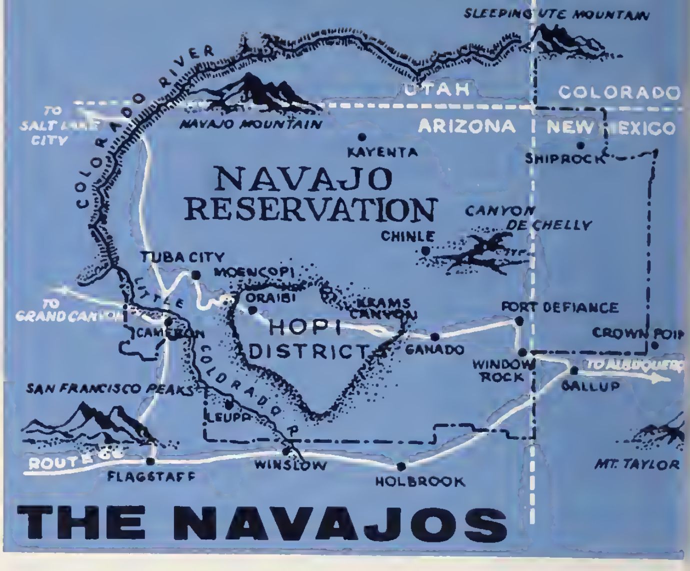
Cornell President Deane Waldo Malott conferred the M.D. degree on 86 graduates, the B.S. in nursing to 53 and the Ph.D. to three candidates.

Dr. Leroy E. Burney, Surgeon General of the United States Public Health Service, gave the commencement address. The Rev. Theodore C. Speers, of Central Presbyterian Church, pronounced the invocation and benediction. Dean Virginia M. Dunbar, of the School of Nursing, administered the Florence Nightingale Pledge, and Dean E. Hugh Luckey, of the Medical College, the Hippocratic Oath. School pins were presented to the nursing graduates by Mr. Francis Kernan, President of The Society of the New York Hospital.

Following the ceremony, a reception for Medical College guests was held in Olin Hall and another for School of Nursing guests in the Nurses Residence.

At the first joint commencement ceremony for graduates of the Cornell University Medical College and the Cornell University-New York Hospital School of Nursing, the young doctors and nurses prepare to sing the Cornell "Alma Mater."

OUR DOCTORS TEAM UP WITH THE NAVAJOS



The Fourfold Concept of medicine of The New York Hospital-Cornell Medical Center, "To heal, to carry on research, to teach, to prevent illness," is in effect being translated into the Navajo language as a result of the Navajo-Cornell Health Program, now in its sixth year.

Two of these objectives "to heal" and "to carry on research," were evidenced in January, 1952, when there began the first part of a joint program of clinical and laboratory investigation of the effectiveness of anti-tuberculosis drugs at The New York Hospital and on the Navajo Reservation. The September, 1953, issue of the Record carried a detailed story of this project.

During the five-year period that this health program has been in progress, some 500 patients have received anti-tuberculosis drug treatment at the Ft. Defiance (Arizona) Sanatorium with encouraging results. Three effective drug treatments have been developed and our medical researchers are continuing their search for still more effective drug treatments than those presently available.

With the program at Ft. Defiance well under way, it became increasingly apparent that a field health service was necessary, through which new methods and procedures could be developed whereby the Navajo people could receive drugs for tuberculosis and other diseases in their own communities and in their own homes. Thus the second part of the Navajo-Cornell Health Program, the Pilot Field Health Project at Many Farms Clinic (Arizona) came into being on July 1, 1955 — and the concepts of "to teach" and "to prevent illness" were translated into Navajo, added to the earlier objectives "to heal" and "to carry on research."

The Many Farms-Rough Rock area was chosen for the first stages of the research project after a careful survey of Reservation communities with the help of Navajo Tribal leaders, Navajo community leaders, and the Public Health Service Sub-area Staff. This area which is in Arizona extends 33 miles in its greatest East-West diameter and 30 miles North-South along the Chinle Valley in the central part of the Navajo territory. Approximately 2,000 persons reside within the area and its four schools include a trailer school, a day school, a boarding school and a mission school.

Between July 1, 1955, and May, 1956, the essential work of constructing and organizing the Project facilities, staff, and training programs was undertaken. A 72 by 32 foot central clinic facility was constructed by the University and 12 trailers for the staff were brought in and installed by the Public Health Service. The basic staff of 12 was selected and the training of the subprofessional staff members was begun. Throughout all of this "tooling up" period, numerous meetings were held with the community through the Many Farms Rough Rock Chapter organization. In these meetings the objectives and the overall design of the research project were repeatedly presented to the people, newly acquired staff members were introduced and gave brief talks, and the progress in the development of the physical plant was periodically inspected.

Moreover, when the professional staff decided that the Project was sufficiently organized to commence the examination and care of patients, that fact was reported to the community leaders who then assumed complete responsibility for opening ceremonies. An essential feature the organization and conduct of the of the official opening on May 8, 1956, was a Navajo religious ceremony performed by two highly respected Medicine Men.

The staff in residence at the project consists of 16 persons, 10 of whom are members of the Navajo Tribe. The resident professional staff consists of three physicians (one of whom is only part-time), two public health nurses, and a social anthropologist. The subprofessional staff includes: the Navajo head of the Health Visitor Training Program and four Health Visitor trainees; a Navajo laboratory and X-ray technician; and clinical and maintenance staff. The work load of the two Public Health nurses is partially shared by faculty members from the Cornell University-New York Hospital School of Nursing who made regularly scheduled four to six week visits to the Project.

As a great deal of the research has to do with the development or modification of methods and technics for the delivery of health services, the Project performs a complete service function while carrying on the scientific investigations. The research program itself can be conveniently divided into three general projects and a considerably larger number of individual "segmental" studies directed toward specific isolated questions.

The three general studies consist of a "survey in depth" of the health status of the community; the Navajo Health Visitor Program; and an investigation of the impact of the project on the community.

The "survey-in-depth" consists of performing careful clinical and laboratory diagnostic studies on as many members of the community as is possible either in the course of some specific illness or as a "health measure" in persons who consider themselves to be free of illness. To date, except for the school health program, only persons in the former category, i.e. those who have sought medical aid, have been examined in this survey. During the first year of the project, 1750 persons have been examined and received treatment. As more than 85 per cent of these people were residents of the research area, precise medical data are now available for considerably more than one-half of the project community. In addition to the 1750 individual people who received initial examination, there were 6000 revisits to the clinic during the year. It is of interest to note that only about one of each one hundred patients examined, had to be referred to a hospital facility for further diagnosis and treatment. Final analysis of the data from these examinations has not yet been completed, but from preliminary examination it appears that no particular surprises are to be anticipated. The major disease problems among the Navajo appear to be the diarrheal disease, particularly in infancy; tuberculosis; and the respiratory infections including sore throat (pharyngitis, tonsillitis), acute and chronic ear infections, and pneumonia.

The second of the general research projects — the Health Visitor Program — is concerned with determining: the technical level to which Navajo men and women with only primary or secondary school education can be trained to serve as competent deputies of the public health nurses in the field and in the clinic; the roles in which the trainees will be accepted in the Navajo home; and the number of such deputies which can be effectively supervised in the field by one public health nurse.

The first "class" of Health Visitor trainees consists of two men and two women. They are receiving intensive instruction in the elementary concepts of modern medicine and training in the transmission of these concepts in the Navajo and English languages. They have all become skillful in the common medical and nursing technical procedures such as the initial history-taking and the administration of treatment including intramuscular injections with aseptic technic. They have all been trained to drive an automobile and these vehicles will shortly be equipped with radiotelephones. In this way, all of their activities in the field, as in the clinic, can be constantly supervised by a public health nurse. If the Health Visitor Program proves ultimately successful, as presently appears to be the case, it should be possible to multiply by three- to five-fold the number of families adequately served by one public health nurse in the field.

The third general research program has to do with the impact of the field health research project itself upon the community. The Navajo is changing in his behavior to his traditional medicine and to the reception of modern medical treatment. It is of the utmost importance that the nature of this change with its many subtleties be understood by those engaged in a field health program. Moreover, as the traditional Medicine Man is such an important part of the fabric of Navajo society, it is essential that in the transfer of some of his responsibilities to the physician, his role in comforting the spirit of the people be not reduced or destroyed. By the same token, the central principles of good modern medicine must not be compromised although certain of its non-essential habits and practices can doubtless be modified with profit. Whether these two goals are so inherently contradictory as to be unattainable, even with the greatest of good faith on both sides, cannot be predicted at present and hence remains a most legitimate object of research.

These studies are being carried on by the behavioral scientists on the staff working together with the physicians, the nurses, and the sub-professional staff members. The Medicine Men in the community, various leaders, and the families in a selected number of representative camps are interviewed periodically and are consulted as a group in numerous community meetings. In addition, a Health Committee for the Many Farms Rough Rock area was organized by the people and meets regularly with the Project Staff.

One important aspect of these studies is an attempt to determine the existence of segments of the community who are uninterested or unreceptive to modern medical care. Thus far no such segments have been detected and the "non-users" of the facilities have amiably asserted that they have been in good health and have had no particular reason to seek medical care. During April, May, and June of 1957 a concerted program of home visits was carried out to induce asymptomatic family contacts of persons infected with tubercle bacilli to come into the clinic for certain appropriate tests. In many cases, the trip for the tests represented a considerable personal effort by a person who believed himself to be in good health. The behavioral science evaluation of the success of this program is still in active progress. It is the general impression of the clinical staff that the final analysis will reveal that there were relatively few active or passive refusals and indeed that the response was considerably better than usually occurs in such programs in our urban centers.

In addition to these three general research projects, a number of "segmental" research projects concerned with some particular question are in progress. These include: a study of the treatment and prevention of infant diarrhea by the use of medication in the home; the treatment of pulmonary tuberculosis by drug treatment in the home; an attempt to prevent the later development of tuberculosis (i.e. tuberculous disease) among the school children already infected with tubercle bacilli by the administration of the drug isoniazid in the home; the comparative values of a community-wide survey versus the examination of household contacts of infected school children, as case-finding methods in tuberculosis; the prevalence of streptococcal infection in the four schools and its year-round control by penicillin prophylaxis; determination of the extent of the deafness problem particularly in the school children by field studies with a portable audiomether; and the prevalence of electrocardiographic evidences of coronary arterial disease among Navajo men and women over 40.

Approximately 100 persons (mostly infante) with acute diarrhea were successfully treated during the summer of 1956 and the drug-prevention program was started in a few camps. It is planned to expand the latter aspect of the program during the 1957 "summer diarrhea" season. Studies, carried on in the Many Farms laboratory and at the Medical College in New York, indicate that a principal cause of the diarrhea is the microbe of bacillary dysentery (Shigella). This microbe is extraordinarily susceptible to certain drugs and can even be successfully eliminated from persons "carrying" it in the absence of obvious disease by drug treatment of only two or three days duration.

In the tuberculosis program it was found that 30 per cent of the 250 young children in the four schools of the Project area were infected with tubercle bacilli as determined by the tuberculin skin reaction. In comparable age groups of U. S. children outside the Navajo Reservation, the prevalence of infection is less than 3 per cent.

At the present time there are approximately 150 Navajo patients receiving anti-tuberculous chemotherapy (isoniazid) in their homes. Approximately 100 of these 150 ambulatory patients are children receiving isoniazid in the "preventive" program. To carry on the tuberculosis treatment program, the nurse-health visitor team have had an ever increasing number of hogan visits. In May, 1957, for example, there were 79 hogan visits made primarily for this program.

One of the segmental programs undertaken by the social anthropologists has been to work with the nursing staff on the establishment of medical records which would accurately reflect the composition of the community served by the clinic.

While many clinics simply record the patient by name and an assigned number, the social scientists and the chief public health nurse believed that it was essential to record each patient's alternate names, (by which he might be known to the trader or governmental officials), his census number, his clan, the head of his family group, and the location of the camp (consisting of several family units) where he resided. Such information is demanding of clerical time, but essential in tracing contagious disease and mapping of a preventive health program. Moreover, the "camp-file" system has already proved itself to be remarkably effective in minimizing the instances in which the same patient is recorded as two separate persons because of a confusion in names.

The anthropologists have also been making a complete census of the community and are working on a system for the recording of all births and deaths.

The behavioral and the medical scientists are also making a study of "medical interpretation." This work is being done in collaboration with Mr. Robert Young and Mr. Chick Sandoval of the Bureau of Indian Affairs. The problem of physician-patient communication with Navajo people is a formidable one not so much because of the wide differences between Navajo people and the English language, but because there are such wide differences between the two cultures in their concepts of bodily disease. If both cultures contained essentially the same concepts of disease and its treatment, any person reasonably fluent in both languages could serve as a satisfactory "bridge" between the patient and his physician. As it stands, however, with the wide difference in medical concepts, an interpreter may be completely bilingual in discussing the ordinary affairs of life, but will be wholly unreliable in medical matters unless he is quite generally familiar with the medical concepts of both cultures.

To be sure, this same principle applies to a degree to cross-cultural communication with respect to technologies other than medicine. But in most other technologies, e.g. animal husbandry, agriculture, formal education, the two people involved in the attempt at communication are both usually concerned with "the world around them" and not with the inner feelings of one. By contrast, for the proper application of modern medicine the physician depends to a very considerable extent (with some diseases, exclusively) on the subtleties and minor graduations in the patient's own description of how he feels in comparison with his usual state. It is for this reason that this fundamental problem in Navajo public health cannot be solved by setting up a general "school for interpreters." Instead, a considerable body of information must be obtained on the medical concept of the two cultures and how they can be transmitted back and forth with understanding. As this is done, it will be necessary to teach this rather considerable body of medical knowledge to the interpreters if they and the physicians are to function effectively.

The various research projects listed are to be continued during the forthcoming year and the Public Health Nurse-Health Visitor Program, in particular, will be expanded to the limits of the available housing. In addition, an organized study will be made of the proper role of Field Health Stations (i.e. a facility not in daily operation) as a type of satellite facility to broaden the area of service of a single Field Clinic. The point of departure for this study will be the weekly well baby "preventive" gathering which has been well attended throughout the past year at Rough Rock.

The basic support for the field health research project comes from the Division of Indian Health of the U. S. Public Health Service by contractural arrangement with Cornell University Medical College. The project is conducted by the Department of Public Health and Preventive Medicine of the Medical College. Additional funds for the support of the project are provided for by research grants from the Navajo Tribal Council, the Russell Sage Foundation, the Max Fleishmann Foundation, and the National Institutes of Health of the U. S. Public Health Service. Generous gifts of valuable commodities or equipment have been made by private industry including The Charles Pfizer Company of Brooklyn; the E. R. Squibb Division of Olin-Mathieson of New York; the Hyland Laboratories of Los Angeles; and the Santa Fe Railroad. The project thus represents a collaborative effort on the part of the Tribe, a university, the Federal government, private foundations, and private industry.

Conducted by the Department of Public Health and Preventive Medicine, Cornell University Medical College, New York City. The responsible investigators are:

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